

REMARKS

By this Response, Applicants are responding to the Official Action dated March 29, 2004 in which the Examiner rejected claims 1-6 (1-4 and 6?) based on Shaheen et al. (6,128,490) in view of Kotzin et al. (5,974,319) under 35 USC § 103(a). By this amendment, independent claims 1 and 6 have been cancelled and claims 2 and 3 have been amended to place them in condition for allowance. Claim 4 is dependent on claim 3 and claim 5 has been indicated to be allowable. For the reasons outlined below, this application is now believed to be in condition for allowance.

The subject invention is directed to a tiered wireless multi-modal access system including a communication system for integrating a plurality of wireless communication networks capable of independent operation to form an integrated communication grid whose overall capacity to handle demand for service is maximized by coordinated control of access. In particular, a plurality of wireless communication networks are provided for servicing users in overlapping geographic area with the wireless communication networks using different communication modes and operating at different broadcast strengths to form different tiers of successively greater effective broadcast areas to serve ever greater geographic areas with the first tier having the greatest geographic broadcast area and the last tier having the smallest broadcast area. The various users are provided with portable wireless, multi-modal access devices, each access device being capable of operating in at least some of the plurality of communication modes compatible with the communication networks and being capable of establishing a communication session over a first communication link using any one of the communication networks while operating in a compatible communication mode. Finally the system contemplates the provision of coordinating requests for service by the access devices to cause wireless communication links to be established, respectively, using the communication network that has the capability of providing the service requested and that is within the tier serving the smallest possible geographic broadcast area to use more efficiently the available radio spectrum by driving users to the networks serving the smallest broadcast areas.

Another aspect of the invention includes the provision of an omni-compatible broadband connection gateway for providing wireless access to a plurality of communication services for a plurality of portable wireless access devices located within a geographic service area of the gateway and capable of operating in a plurality of different communication modes in a manner to use the most effective and efficient communication protocol via a wireless link to the portable wireless access device having the smallest possible broadcast range consistent with the service desired. This aspect of the invention is achieved by providing a frequency agile and protocol agile radio transceiver capable of wireless communication with a plurality of portable wireless access devices within the geographic service area of the gateway over a plurality of re-assignable communication channels. These channels are adapted to be assigned to those portable wireless access devices to which a communication service is supplied using a frequency and communication protocol compatible with the requirements of the portable wireless access device and compatible with the communication service being supplied. Also included is an interface circuit for providing a broad band communication channel between the radio transceiver and all communication services being provided by the gateway to the portable wireless access devices operating within the geographic service area of the gateway. Finally the gateway includes a transceiver controller connected with the radio transceiver for causing the radio transceiver to assign an appropriate communication channel to each portable wireless access device to which a communication service is to be provided. By this arrangement, the communication channel is selected by the controller to be compatible with the requirements of the communication service and the corresponding portable wireless access device and for causing the radio transceiver to employ a communication protocol and to employ an appropriate frequency for wireless broadcast over each communication channel using the smallest possible broadcast range consistent with the service desired to allow all of the communication services to be supplied to the portable wireless access devices served by the gateway to be operated simultaneously using the available radio spectrum in the most efficient possible manner.

The Examiner rejected original claims 2 and 3 based on Shaheen '490 in view of Kotzin '319. The Shaheen '490 patent is directed to a wireless communication system that supports selection of operation from multiple frequency bands and multiple protocols. However, this patent does not disclose the capability of providing the service requested within a "tier" of networks serving the smallest possible geographic broadcast area whereby the system is able to

use more efficiently the available radio spectrum by driving users to the networks serving the smallest broadcast areas. Claim 2 has been amended to describe this feature of applicant's invention. The reference to Kotzin '319 discloses a system for promoting handoff between networks operating under different protocols during a communication session but does not disclose a system for promoting efficient use of radio spectrum as now called for by claim 2.

Claim 3 was amended to overcome the combination of Shaheen '490 and Kotzin '319 by including a radio transceiver designed to employ a communication protocol and to employ an appropriate frequency for wireless broadcast over each communication channel using the smallest possible broadcast range consistent with the service desired to allow all of the communication services to be supplied to the portable wireless access devices served by the gateway to be operated simultaneously using the available radio spectrum in the most efficient possible manner. Neither Shaheen '319 nor Kotzin '319 disclose this feature of the disclosed and claimed invention.

Claim 4, dependent on claim 3, calls for a memory for storing a plurality of data sets allowing the radio transceiver to implement those communication protocols appropriate for supplying the respective communication services accessible by the interface circuit for wireless broadcast over the respectively assigned communication channels. This feature in combination with the limitations of claim 3 as amended is not shown in the cited references.

The patent to Rune (6,212,390) discloses a multiple protocol system but fails to disclose the features disclosed in amended claims 2 and 3 for improving efficient use of radio spectrum.

The status of all claims in this applications is as follows:

Claim 1 has been cancelled

Claims 2 and 3 have been amended.

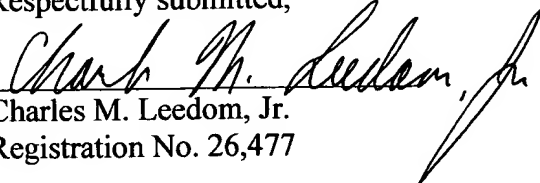
Claim 4 is dependent on claim 3 and has been amended to correct a typographic error.

Claim 5 has been indicated as allowable but has been amended to correct a typographic error.

Claim 6 has been cancelled.

Re-examination and allowance of this application is now respectfully requested.

Respectfully submitted,


Charles M. Leedom, Jr.
Registration No. 26,477

MLR, LLC
6524 Truman Lane
Falls Church, VA 22043
Tel: (703) 241-0165
Fax: (703) 241-5733
Email: cleedom@mlr-llc.com
CML/cml